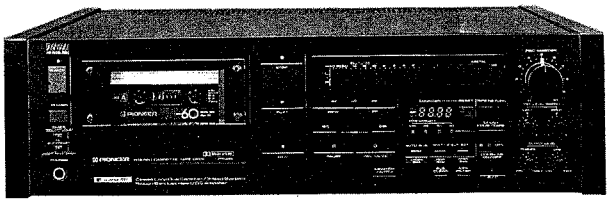
Operating Instructions

STEREO CASSETTE TAPE DECK

CT-A9X

- Side panels not supplied with Europe and U.K. models.
- Photograph shows BLACK finished models.



This product is manufactured to comply with the radio interference requirements of EEC Directive "76/889/EEC & 82/499/EEC".

Thank you for buying this Pioneer product.
Please read these operating instructions thoroughly, so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.
For the sake of convenience, these operating instructions are based on the model HEM, and they can be used for the HB, HP, KU, KC, D and D/G models.
The differences between the models are given below.

HEM model:
For Europe excluding U.K. ('HEM' stamped on packing case): Power line voltage is AC 220 volts.

HB model:
For U.K. ('HB' stamped on packing case): Power line voltage is AC 240 volts.

HP model:
For Australia ('HP' stamped on packing case): Power line voltage is AC 240 volts.

KU and KC models:
For U.S.A. and Canada ('KU' or 'KC' stamped on packing case): Power line voltage is AC 120 volts.

D and D/G models:
For destinations excluding above ('D' or 'D/G' stamped on packing case): A 3-point (120 V/220 V/240 V) voltage selector switch is provided.

NOTE:
Depending upon the model, the design of the power plug and the power outlet differs.

The line voltage selector switch is located on the rear panel of the unit. Please check that it is set properly before plugging the power cord into an outlet. If it is not set properly, change the setting of it according to the LINE VOLTAGE SELECTION (D and D/G models only).

IMPORTANT NOTICE (For KU and KC models)

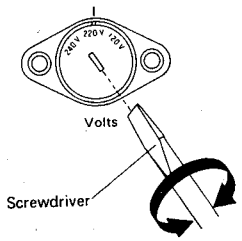
The serial number for this equipment is located on the rear panel. Please write this serial number on your enclosed warranty card and keep in a secure place. This is for your security.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

LINE VOLTAGE SELECTION
(D and D/G models only)

Before your model is shipped from the factory, the switch is set to the power requirements of the destination; nevertheless, you should check that it is set properly before plugging the power cord into the AC outlet.

1. Disconnect the power cord.
2. Provide yourself with a medium size screwdriver.
3. Insert the screwdriver into the groove on the voltage selector and adjust the voltage value of your area.



HEM (for Europe excluding U.K.), HB (for U.K.), HP (for Australia), KU (for U.S.A.) and KC (for Canada) models are not provided with a LINE VOLTAGE SELECTOR switch.

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PIONEER®

SAFETY INSTRUCTIONS

READ INSTRUCTIONS — All the safety and operating instructions should be read before the appliance is operated.

RETAIN INSTRUCTIONS — The operating instructions should be retained for future reference.

HEED WARNING — All warnings on the appliance and in the operating instructions should be adhered to.

FOLLOW INSTRUCTIONS — All operating and use instructions should be followed.

WATER AND MOISTURE — The appliance should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

LOCATION — The appliance should be installed in a stable location.

WALL OR CEILING MOUNTING — The appliance should not be mounted to a wall or ceiling.

VENTILATION — The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

HEAT — The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

POWER SOURCES — The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

POWER-CORD PROTECTION — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

POLARIZATION — If your purchased product is provided with a polarized power plug, please read the following instructions. This product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

CLEANING — The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.

POWER LINES — An outdoor antenna should be located away from power lines.

NONUSE PERIODS — The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

OBJECT AND LIQUID ENTRY — Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

DAMAGE REQUIRING SERVICE — The appliance should be serviced by Pioneer authorized service center or qualified service personnel when:

- The power-supply cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or
- The appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped; or the enclosure damaged.

SERVICING — The user should not attempt to service the appliance beyond that described in the operating instructions. For all other servicing, contact the nearest Pioneer authorized service center.

OUTDOOR ANTENNA GROUNDING — If an outside antenna is connected to the antenna terminal, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges.

In the U.S.A. section 810 of the National Electrical Code, ANSI/NEPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Fig. A.

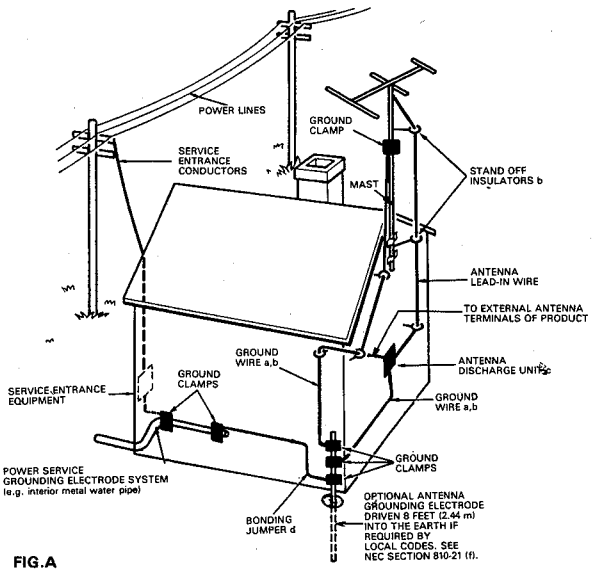

POWER LINES
GROUND CLAMP
SERVICE ENTRANCE CONDUCTORS
MAST
STAND OFF INSULATORS b
ANTENNA LEAD-IN WIRE
TO EXTERNAL ANTENNA TERMINALS OF PRODUCT
GROUND WIRE a,b
ANTENNA DISCHARGE UNIT c
GROUND CLAMPS
SERVICE-ENTRANCE EQUIPMENT
GROUND WIRE a,b
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (e.g. interior metal water pipe)
OPTIONAL ANTENNA GROUNDING ELECTRODE DRIVEN 8 FEET (2.44 m) INTO THE EARTH IF REQUIRED BY LOCAL CODES. SEE NEC SECTION 810-21 (f).
BONDING JUMPER d

FIG.A

a) Use No. 10 AWG (5.3 mm²) copper, No. 8 AWG (8.4 mm²) aluminum, No. 17 AWG (1.0 mm²) copper-clad steel, bronze wire, or larger as ground wire.

b) Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4 feet (1.22 meters) to 6 feet (1.83 meters) apart.

c) Mount antenna discharge unit as closely as possible to where lead-in enters house.

d) Use jumper wire not smaller than No.6 AWG (13.3 mm²) copper or equivalent when separate antenna-grounding electrode is used.

IMPORTANT 1

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT 2

If the apparatus is fitted with AC mains power outlet(s), see REAR PANEL FACILITIES for convenient connection of additional Hi-Fi component(s). Make all connections to the AC outlet(s) and the signal terminals firts. Connect the plug to the wall socket last, make sure that the power switch is off. Disconnect the wall plug when the equipment is not in (regular) use, e.g. when on vacation.

FOR USE IN THE UNITED KINGDOM

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured marking identifying the terminals in your plug proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

Equipment sold in the U.K. is not supplied with a power plug.

FEATURES

AUTOMATIC SILENT-LOADING MECHANISM

The use of an optical cassette detector and shift mechanism makes possible easy-to-operate auto loading and power eject. In addition, thorough attention has been paid to all aspects of construction, from selection of materials for motor drive transmission parts, to final assembly, in order to assure that the mechanism operates as silently as possible.

MOL BALANCE CONTROL TYPE AUTO BLE

Differences in the frequency spectrum of the music source changes the AUTO BLE bias adjustment point in 3 stages. This allows a flat frequency response and dynamic range at the maximum limits allowable with tape.
AUTO BLE: An abbreviation for Automatic Bias, Level and Equalizer Tuning System.
MOL: An abbreviation for Maximum Output Level.

AUTO MONITOR

For simplified operation of the bothersome monitor switch during recording. This feature allows you to switch between tape monitor and source monitor merely by pressing the operating switch.

FEATHERTOUCH, EASE OF OPERATION WITH IC LOGIC

The unit is a joy to operate, with sure, microcomputer digital feedback servo controller mechanism, allowing direct transition from playback to fast forward, rewind.

TAPE SLACK PREVENTION FUNCTION

With the tape slack prevention function, when the cassette holder closes, the takeup reel automatically revolves to eliminate any tape slack.

DOLBY NR B, C SYSTEMS

In addition to the previous Dolby B noise reduction system, the unit is equipped with the Dolby NR C type system and its superior noise reduction effect for even greater fidelity of sound reproduction.

MPX FILTER

Using the Dolby NR system, the MPX filter can be switched to ON or OFF for more effective noise reduction with FM stereo broadcasts.

AUTO RECORDING MUTE FUNCTION

The automatic recording mute function creates a non-recorded interval of 4 seconds at one touch, then automatically returning the unit to the recording standby mode. This function is very convenient for cutting out commercials and unwanted narration during FM broadcast recording and editing.

BUILT-IN MUSIC SEARCH FUNCTION

The music search function is convenient for locationg a particular program on a tape, or when performing repeat play of a certain program.

DUAL MODE COUNTER

The four-digit digital display can be used either as a real time counter for displaying the time remaining on the tape, or as a normal tape counter display.

TIMER FUNCTION ALLOWS ABSENTEE RECORDING OR WAKEUP PLAYBACK

When used with an optional audio timer, you can wake up to your favorite music, or perform automatic tape tuning and recording start. The AUTO BLE timer recording function gives you more freedom for recording.

CLOSED LOOP, DUAL CAPSTAN DRIVE

This mechanism drives the tape using two sets of capstans and pinch rollers. Tape travel is greatly stabilized in order to shut out any external vibration. Wow and flutter, and modulation noise is reduced, letting you enjoy even greater clarity of tone. In the capstan a quartz PLL D.D. motor is used, the reel motor is a super-low torque ripple coreless type.

THREE-HEAD SYSTEM USING RIBBON SENDUST HEADS

Since a 3-head system, using independent recording, playback, and erasing heads is used, you can monitor the playback sound while recording, thus allowing you to check the recording status. Ribbon Sendust, developed through Pioneer's own magnetics technology, is used in the combination recording/playback head, while anoxic copper windings are used in the playback head, and the erasing head uses a special alloy with high efficiency for small window use. As a result, the full performance of high-output tapes, including metal tapes, is fully demonstrated, delivering the dynamic energy of sound with superb sound quality.

DC AMPLIFIER

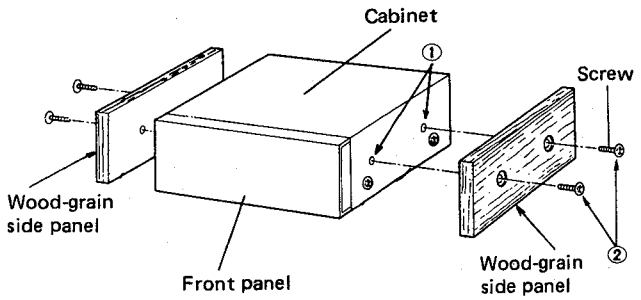
A DC amplifier, with superb tone and phase characteristics and dynamic range is used for the playback equalizer amp. The first stage is a low noise dual FET differential 2-stage type amp, while the power section is a shunt type ± 2 power unit composition.

ABOUT THE ACCESSORY WOOD-GRAIN SIDE PANELS

Side panels not supplied with Europe and U.K. models.

When the side panels are used, please abide by the following items:

- **Use only the screws accompanying the side panels for installation.**
- **Do not remove any screws attached to this unit.**
- **When repacking this unit (for storage or shipment), remove the side panels first.**



Installation:

(1) Use your fingernail, etc., to remove the two plastic rivets (one on each side) on the sides of the unit. The rivets are made of the pair (A) and (B); be sure to remove both (A) and (B) together.

(2) Using the holes from which the plastic rivets were removed, attach the wood-grain side panels to the unit with the accessory screws. Be sure to install the panels so that the wood-grain pattern is on the outside.

DEW CONDENSATION

When the unit is moved from a cold to a warm room, or a quick temperature change occurs, condensation will form on the mechanical parts affecting performance of the unit. In such cases, leave the unit in a warmer atmosphere for approximately one hour, or gradually change the room temperature.

NOTE:
When locating the tape deck, do not place a cloth over the top or block the ventilation openings in any other way.

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacture's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- reorient the receiving antenna
- relocate the cassette tape deck with respect to the receiver
- move the cassette tape deck away from the receiver
- plug the cassette tape deck into a different outlet so that the cassette tape deck and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Comission helpful.
"How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the US Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

The above instructions apply only to units which will be operated in the United States.

REAR PANEL FACILITIES AND CONNECTIONS

Before Connecting

- Do not switch on the power until all the connections have been completed.
- The top jacks are for the left (L) channel; the bottom jacks are for the right (R) channel.
- Make certain the connectors are pushed all the way in. An improper connection or poor contact will result in no sound, or will degrade the sound.
- When installing the unit, do not impede heat dissipation by placing anything such as a cloth on the top panel.
- Read through the operating instructions of the stereo components you plan to connect with this unit.
- Set the stereo amplifier's power switch to OFF and its volume control to the minimum position.

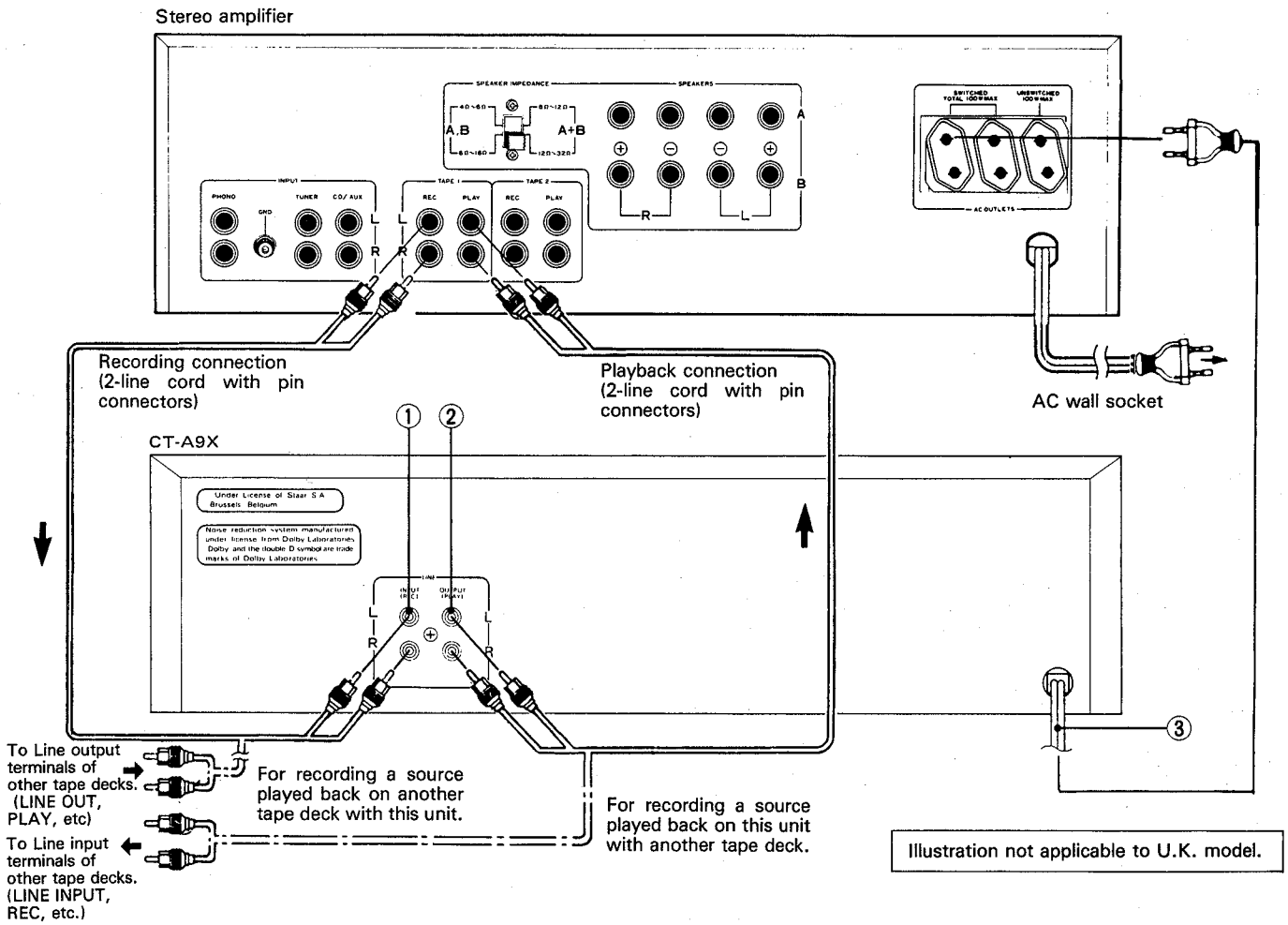

Stereo amplifier
Recording connection (2-line cord with pin connectors)
Playback connection (2-line cord with pin connectors)
AC wall socket
CT-A9X
To Line output terminals of other tape decks. (LINE OUT, PLAY, etc)
To Line input terminals of other tape decks. (LINE INPUT, REC, etc.)
For recording a source played back on another tape deck with this unit.
For recording a source played back on this unit with another tape deck.

Illustration not applicable to U.K. model.

❶ LINE INPUT TERMINALS

The signals to be recorded are received here. Connect the accessory cord to the amplifier's TAPE REC terminals.

❷ LINE OUTPUT TERMINALS

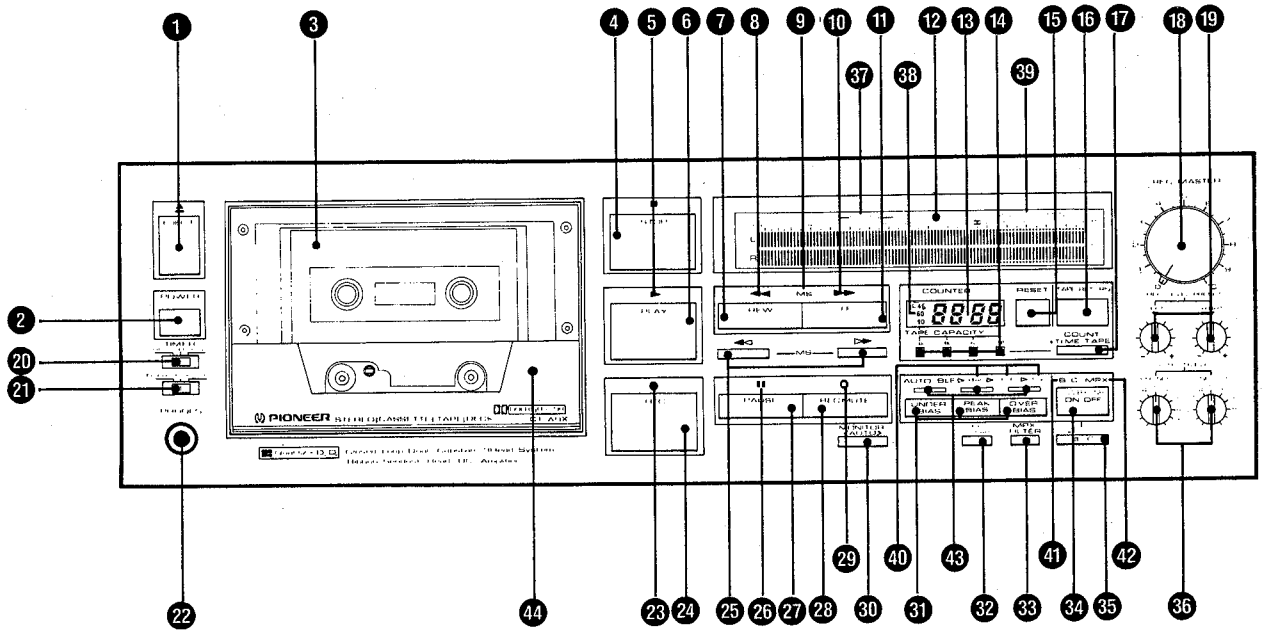
The playback signals are sent from here to the stereo amplifier. Connect the accessory cord to the amplifier's TAPE PLAY terminals.

❸ POWER CORD

Plug the power cord into the SWITCHED AC OUTLET on the rear panel of the amplifier or into an AC wall socket.

Power supply frequency
This unit employs a DC motor and so it can be used with whatever power line frequency you have in your area.

FRONT PANEL FACILITIES



❶ EJECT BUTTON

Press this button to open the cassette door. Whenever inserting or removing a cassette tape, be sure that the power is turned ON.

❷ POWER SWITCH

When this switch is depressed power is turned ON, and when it is depressed again, power is turned OFF. After the power is turned ON, the unit will not operate for a duration of 4 seconds which is the neccesary time for the unit to become stable.

❸ CASSETTE DOOR

This door opens when the EJECT button is pressed. Insert cassette tapes with the visible part of the tape downward. When a cassette tape is inserted, the cassette door will automatically close. The cassette door will also close if it is lightly pressed. Unless the unit is powered, the door can not be opened.

NOTE:
If the cassette door is closed after turning the power off, the next time the power is turned ON and an operating switch is pressed, the cassette door will open and close once. This is in order to reset the microprocessor to the correct condition, and is not a malfunction.

❹ STOP SWITCH

Depress this switch to stop the tape travel and to release the operating switches.

❺ PLAY INDICATOR (►)

This indicator lights when the PLAY switch is pressed. It also lights when the REC switch is pressed to set the unit in the recording mode.

❻ PLAY SWITCH

Depress this switch to playback a tape.

❼ REW SWITCH

Depress this switch to rewind the tape. (The tape will travel from right to left.)

❽ REWIND INDICATOR (◄◄)

This indicator lights when the rewind switch (REW) is pressed. The indicator lights also when the music search (MS) ◄◄ switch is pressed.

❾ MUSIC SEARCH INDICATOR (MS)

This indicator lights when either of the music search switches (◄◄ or ►►) is pressed.

❿ FAST FORWARD INDICATOR (►►)

This lights when the fast forward (FF) switch is pressed. When the music search (MS) switch ►► is pressed, the indicator also lights.

⑪ FF SWITCH

Depress this switch to send the tape forward. (The tape will travel from left to right.)

⑫ LEVEL METER

This indicates the recording level during recording and the output level during playback. The top part is for the left (L) channel and the bottom part for the right (R) channel.

⑬ DUAL MODE COUNTER (COUNTER)

This counter has two functions, "tape counter" and "real time counter," depending on the position of the counter mode switch (● TIME/TAPE).

When used as a "tape counter," the figures change as the tape travels and its transport position is indicated by a 4-digit number. When the RESET button is pressed, the counter is reset to "0000."

When the power is switched on, the counter functions as a "tape counter."

When used as a "real time counter," the remaining time on the tape during recording or playback is indicated. Set the TAPE CAPACITY switch to the position corresponding to the type of tape (length, hub diameter) being used. For further details on the dual mode counter, refer to page 15.

⑭ TAPE CAPACITY SWITCH (TAPE CAPACITY)

When the dual mode counter is used as a real time counter, this switch is set in accordance with the tape type (tape length, hub diameter).

L46 ..... For C-46 large hub diameter tapes.
46 ..... For C-46 tapes.
60 ..... For C-60 tapes.
90 ..... For C-90 tapes.

NOTE:
For tapes other than those listed above, set to the position nearest to the actual length of the tape used. In those cases, there may be some difference in the time displayed.

⑮ RESET BUTTON (RESET)

Press this to reset the tape counter to "0000." Before recording or playback, press this button to reset the tape counter to "0000." It will then be easy to find programs on the tape if a note is made of the tape counter numbers and of the recording or playback contents. The numbers provide you with a guideline for finding programs afterward which you want to listen to. The tape counter can be reset while being used as a real time counter, however "0000" is displayed only while the RESET button is depressed.

⑯ TAPE RETURN SWITCH (TAPE RETURN)

When this switch is pressed, the fast forward or rewind functions will begin, sending the tape to the "0000" position, where it will automatically stop. This is a convenient function when you wish to listen immediately to a program you have just recorded, or when you wish to perform repeat play of a certain program.

⑰ COUNTER MODE SWITCH (● TIME/TAPE)

Push this switch to select the dual mode counter function.

⑱ REC MASTER VOLUME CONTROL (REC MASTER)

This control is for adjusting general recording levels. The recording level increases when the control is turned clockwise, and decreases when turned counter-clockwise. The control is equipped with a memory marker useful for remembering a predetermined volume level, for example when performing fade-in.

⑲ REC LEVEL PRESET VOLUME CONTROLS (REC LEVEL PRESET)

These are normally set in the click position (▼). After setting the general recording level with the recording master volume control, these controls can be used to finely tune the R and L channels' volume levels. The recording level is increased when the controls are turned in the (+) direction, and reduced when the controls are turned in the (−) direction.

⑳ TIMER SWITCH (TIMER)

This switch is used when an optional audio timer is utilized for unattended recording or wakeup playback (refer to page 16).

NOTE:
The timer switch should always be in the OFF position when not performing timer recording or playback. If a cassette tape is inserted and the switch is set to the REC or PLAY position, the unit will automatically enter the recording or playback mode whenever the power switch is turned on.

㉑ BIAS SWITCH (Connected to TIMER SWITCH)

Depending on the program source to be recorded, this switch can be set in 3 positions to adjust the peak bias in a ± 15% range. When you wish to emphasize high ranges or low ranges, you can choose a setting with deeper (more) or shallower (less) bias. When bias is shallow, the high ranges are extended, but distortion increases in proportion. Conversely when bias is deepened, the high ranges fall off, but distortion is lessened.

UNDER : Set to this position for recording music such as rock music with wide dynamic range in the high ranges, and substantial modulation of sounds.
PEAK : For recording most general kinds of music.
OVER : Set to this position when you wish to record classic and other similar music with increased middle and low range MOL, and low distortion.

NOTE:
This switch operates when the TIMER switch is set to the REC position.

㉒ PHONES JACK

This is the output jack for the stereo headphones.

㉓ RECORDING INDICATOR (●)

This lights when the unit is set to the recording mode.

㉔ REC SWITCH

This switch is pressed for recording. When the switch is pressed, the tape deck is placed in the recording standby mode, and the pause indicator (■■), play indicator (►) and recording indicator (●) will light. To begin recording, press the PAUSE switch to release from the recording standby mode.

NOTE:
- *The switch cannot be placed in the ON position if the accidental erasure prevention tab on the cassette have been broken off, or if no cassette is in the unit.*
- *To release the tape deck from the recording mode, press the STOP switch.*

㉕ MUSIC SEARCH SWITCH (MS)

This switch is pressed when searching for the beginning of programs (Refer to page 14).

㉖ PAUSE INDICATOR (■■)

This indicator lights when the PAUSE switch is pressed. It also lights when the REC switch is pressed.

㉗ PAUSE SWITCH

Depress this switch to stop the tape travel temporarily during recording or playback. Depress this switch again to allow the tape to continue to travel.
The tape does not stop during fast forward or rewind operations even when the PAUSE switch is depressed.

㉘ REC MUTE SWITCH (REC MUTE)

When the unit is in the recording mode, if this switch is pressed, 4 seconds of non-recorded interval will be created automatically. This can be used for eliminating unwanted portions during recording, or for producing an appropriate non-recorded interval between programs. (Refer to page 14.)
Be careful not to press this swich except when necessary.

㉙ RECORDING MUTE INDICATOR (○)

This indicator flashes when the REC MUTE switch is pressed to create an automatic 4 second non-recorded portion. When a non-recorded portion longer than 4 seconds is created, the indicator changes from flashing to steadily lighted.

㉚ AUTO MONITOR SWITCH (AUTO MONITOR)

This unit is equipped with an automatic monitor function. This means that when the unit is in the recording standby mode, SOURCE MONITOR, or when in the playback mode, TAPE MONITOR is automatically selected. However, when you wish to select TAPE/SOURCE monitoring manually, this switch can be pressed. When the switch is pressed, the unit will switch to the mode opposite to that of prior to pressing the switch. For example, if the unit is in the TAPE MONITOR mode before the switch is pressed, it will switch to the SOURCE MONITOR.
The [TAPE] – MONITOR – [SOURCE] indicators in the level meter will light to show the monitoring mode.

㉛ BIAS SWITCHES (UNDER BIAS, PEAK BIAS, OVER BIAS)

These switches are used when adjusting the AUTO BLE to choose an under, peak, or over bias point. When these switches are pressed, the AUTO BLE operation begins. During BLE adjustment, the indicators above the switches flash as appropriate. When BLE adjustment is completed, the indicator for the appropriate switch lights steadily.
In order to protect against mistaken operation, the BLE operation will not start even if the switches are pressed unless the unit is in the stop condition.

㉜ AUTO BLE CLEAR SWITCH (CLEAR)

When this switch is pressed, the data set by the AUTO BLE system are cleared. After clearing, the bias, level and equalization are all set to the standard values selected by the auto tape selector.

NOTE:
When the unit is in the recording, playback, recording standby, or playback standby mode, data will not be cleared even if the clear switch is pressed. To clear data, perform this operation with the unit in the stop mode.

㉝ MULTIPLEX FILTER SWITCH (MPX FILTER)

Push this switch when recording FM stereo broadcasts or TV programs using the Dolby noise reduction system.
Contained among the FM stereo signals are a 19 kHz pilot signal and the 38 kHz subcarrier. The MPX FILTER switch is pressed in order to safeguard against incorrect operation of the Dolby circuit due to these signals. Release the switch for any other recording. The switch does not function during playback.

㉞ DOLBY NR SWITCH (DOLBY NR ON/OFF)

Press this switch ON when using the Dolby NR system for recording or playback. When the Dolby NR system is ON, the Dolby indicator B or C lights.

"Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
Noise Reduction manufactured under license from Dolby Laboratories Licensing Corporation.

㉟ DOLBY B/C SELECTOR SWITCH (DOLBY NR B/C)

This deck is equipped both type B and type C Dolby noise reduction systems. After the DOLBY NR ON/OFF switch is pressed, select type B or C using this switch. The Dolby indicator corresponding to the switch position lights.

㊱ OUTPUT LEVEL VOLUME CONTROLS (OUTPUT LEVEL)

These controls are for adjusting the deck's output level. When the controls are turned clockwise, output level is increased. (Refer to page 13.)

PHONES ... Adjusts output level at headphones jack.

LINE OUT ... Adjusts output level at LINE OUTPUT (PLAY) terminals on the rear panel.

NOTE:

- *The movement of the level meters is not affected by rotation of the output level volume controls.*
- *If the output level control is set at the minimum "0" position, no sound will be heard, even if the amplifier's volume control is rotated.*
- *If the PHONES volume control is set at the minimum "0" position, no sound will be heard from headphones.*

㊲ MONITOR INDICATOR (MONITOR)

This indicator shows the monitoring mode selected by the automatic monitoring function.

㊳ TAPE CAPACITY INDICATOR

This indicator shows the type of tape selected with the TAPE CAPACITY switch.

㊴ TAPE INDICATORS (NORM/CrO_2/METAL)

This mechanism uses the sensor holes on the cassette to detect the type of tape being used. It then automatically adjusts the proper recording bias and equalization for the tape. The type of tape is then shown on the tape indicator. Refer to page 19 for the different types of cassette tapes and their hole positions.

NORM: This indicator lights when normal tapes are used.
CrO_2: This indicator lights when CrO_2 tapes are used.
METAL: This indicator lights when metal tapes are used.

NOTE:
When using metal tapes without sensor holes, the tape selector will be set on the CrO_2 position. In this case, optimum recording and erasure may not be possible. We thus recommend that you use metal tapes with sensor holes. Pre-recorded metal tapes can be played as is on this unit.

㊵ BIAS, LEVEL, EQ ADJUSTMENT INDICATORS

The AUTO BLE performs adjustments in the order bias ➡ level ➡ equalizer. The BIAS, LEVEL, and EQ indicators light in order together with the adjustment process. When the equalizer adjustment is completed, the indicators go out.

㊶ DOLBY INDICATORS (DOLBY NR)

These light when the DOLBY NR switch is set to ON .

[B]: This lights when the B type Dolby noise reduction system is operating.

[C]: This lights when the C type Dolby noise reduction system is operating.

㊷ MULTIPLEX INDICATOR (MPX)

This indicator lights when the Multiplex filter (MPX FILTER) switch is pressed ON.

㊸ BIAS INDICATORS

In accordance with the setting of the bias switches, these indicators flash during AUTO BLE adjustment, and light steadily when adjustment is completed. (Refer to page 12.)

㊹ HEAD CLEANING ACCESS PORT (Refer to page 17)

About Transparent Tape Cassettes

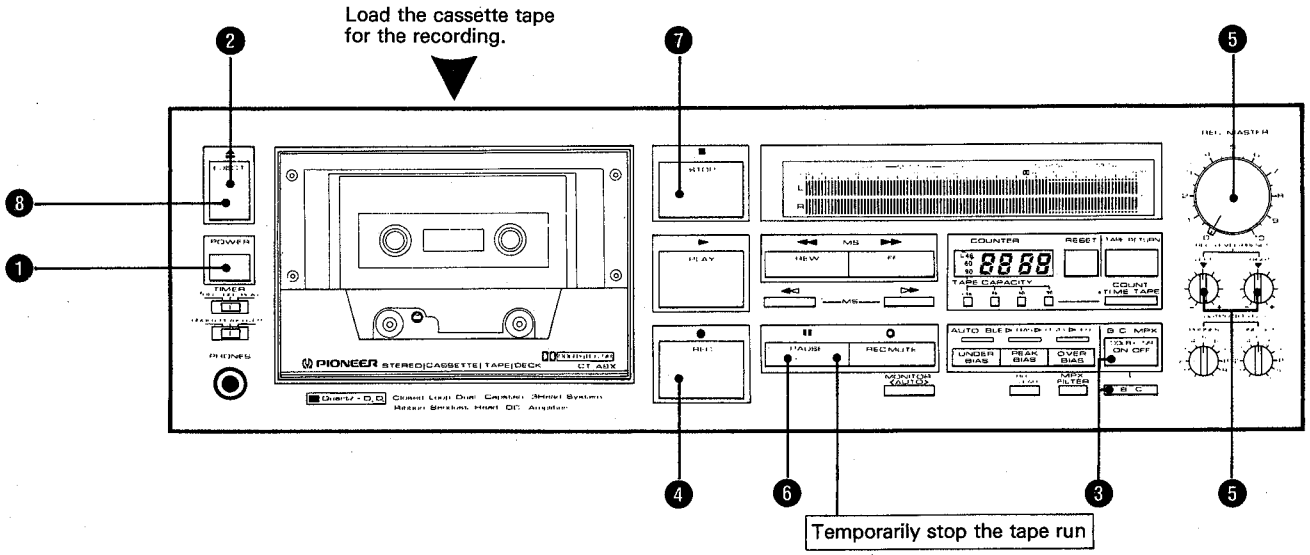
This unit is equipped with an automatic loading device which optically detects the presence of a tape cassette in the cassette holder, thus causing the cassette door to automatically close.

- Some tape cassettes are made from a transparent plastic material. The unit's auto loading device may not operate properly when these transparent tape cassettes are used.
- In this event, press the cassette door slightly with your finger, or use one of the direct operating switches (recording switch or playback switch) to close the cassette door.

RECORDING

- Is the power cord correctly connected to an outlet?
- Are connecting cords and wires connected correctly?
- Is the TIMER switch set to the OFF position?
- Are the accidental erasure prevention tabs broken off of the tape cassette?
- If using metal or chromium dioxide tapes, does the tape cassette have sensor holes?
- Is the program source ready to be recorded?

When using the AUTO BLE system for recording, refer to the section on AUTO BLE on page 12.



❶ Depress the POWER switch to ON.

❷ Press the EJECT button to open the cassette door.

With the exposed tape surface pointing down, insert an unrecorded tape. The auto loading function will close the cassette door automatically. Also, if the tape has any slack, the tape slack prevention function will operate to take up any slack.

❸ Select the DOLBY NR switch positions.

When recording material using the Dolby Noise Reduction System, press the DOLBY NR (ON/OFF) switch to the ON position. Then select type B or C using the DOLBY NR (B/C) switch.

NOTE:
Set the Multiplex filter (MPX FILTER) ON when recording FM broadcast with Dolby NR system.

❹ Press the REC switch.

When this switch is pressed, the tape deck is placed in the recording standby mode, and the recording indicator (●), the play indicator (►)and the pause indicator (■■) will light. The auto monitor will switch to the source monitor (SOURCE display will light).

❺ Adjust the recording level.

Adjust the recording level with the REC MASTER volume control. Fine adjustment of the left and right channel is done with the REC LEVEL PRESET volume control.

❻ When PAUSE switch is pressed, the standby mode is cancelled and recording starts.

The auto monitor will automatically switch to tape monitor (TAPE display will light).

❼ Press the STOP switch to stop the recording.

To temporarily stop the recording, press the PAUSE switch. To resume recording, press the PAUSE switch again.

❽ Press the EJECT button to open the cassette door and remove the cassette tape.

Lightly close the cassette door with your finger after removing the cassette tape.

Cautions with recording

- The DOLBY mark on the meter scale indicates the reference level of the Dolby noise reduction system.
- In actual fact, the proper recording level differs slightly according to the type of tape, the sound and the music being recorded. In order to make the most of the tape's characteristics and produce good-quality recordings, it is important to check the sound yourself by ear.
- The level meter may light up in a different way for recording and playback. This is caused by the difference in the tape's sensitivity and a slight deviation in this respect does not pose any problems.

ADJUSTING THE RECORDING LEVEL

The adjustment of the recording level is an important factor in achieving good recording results. A high level is good for the signal-to-noise ratio and the dynamic range but an excessively high level distorts the sound. If the level is made too low out of fear of distorting the sound, irritating tape hiss will mar the recording. Depending on the manufacturer and type of tape, the characteristics of a tape differ even when the same kind is used. Making a setting to just near the tape's maximum recording level will do full justice to a tape's characteristics and result in a good-quality recording.
When INPUT level controls can also be used to fade in the sound where the recording level is gradually increased or to fade out the sound where the level is gradually reduced.

Using normal tapes (NORM)

Adjust the controls so that "+3 dB" designated by " ▯▯ " lights up from time to time with the strongest input signals. It does not matter if "+ 6 dB" also lights momentarily.

Using chrome tapes (CrO_2)

Adjust the controls so that "+ 3 dB" designated by " ▯▯ " lights up from time to time with the strongest input signals. It does not matter if "+ 6 dB" also lights momentarily.

Using metal tapes (METAL)

Adjust the controls so that "+ 5 dB" lights up from time to time with the strongest input signals. It does not matter if "+ 8 dB" also lights momentarily.

ERASING RECORDED SOUND

When a new recording is made on a previously recorded tape, the old recording is automatically erased as the new recording is made. To erase the old recording without making a new recording, perform the following:

1. Check that the accidental erasure prevention tabs have not been broken off of the tape cassette. If the tabs are broken, cover the holes with celophane tape. (Refer to page 19).
2. Load the tape in the cassette holder with the side to be erased facing you.
3. Rotate either the REC MASTER volume control or the REC LEVEL PRESET volume control fully to the left (counter-clockwise).
4. Press the REC switch. Press the PAUSE switch to release the unit from the recording standby mode, and begin the recording. In this way, the previous contents will be completely erased.

ABOUT THE POWER EJECT/AUTO LOADING FUNCTION

In this unit, the opening and closing of the cassette door is controlled automatically by the power eject/auto loading function. Be sure to install the deck in a location which will not interfere with the opening and closing of the cassette door. A safety device connected to the built-in microprocessor operates if the cassette door is prevented from opening or closing fully. In these cases, eject, loading, and other operations cannot be performed. Check the source of the problem before operating again.

ABOUT THE 3-HEAD SYSTEM AND AUTO MONITORING

A 3-head system is the combination of three independent heads (recording, playback, erasure) together with recording and playback amplifiers. Such 3-head systems are equipped with a MONITOR switch to allow switching between the recording amplifier and playback amplifier. When switched to SOURCE, the signals being recorded can be monitored. When set to TAPE, the signals recorded on the tape can be monitored.
This deck is equipped with an automatic monitor function which automatically switches to the appropriate mode depending on the setting of the operating switches. When in the recording and playback mode, the deck switches automatically to tape monitor, and when in recording standby mode, the deck switches to source monitor. During recording, by performing simultaneous monitoring (in the tape monitoring mode), you can play back and monitor signals even as they are being recorded, thus allowing you check for optimum recording levels.

AUTO-STOP MECHANISM

When the tape comes to the end and is fully wound up in the playback, recording, fast forward or rewind mode or when the tape is fully rewound, the mode is automatically released and the tape is stopped by the auto-stop mechanism. This mechanism prevents the tape from becoming elongated and the pinch rollers from being deformed.

FAST FORWARDING

The tape is rapidly forwarded from the left reel to the right reel when the FF switch is depressed. When the tape is forwarded to its end, the auto-stop mechanism is activated and the tape stops.
Depress the STOP switch to stop a fast forwarding operation.

REWINDING

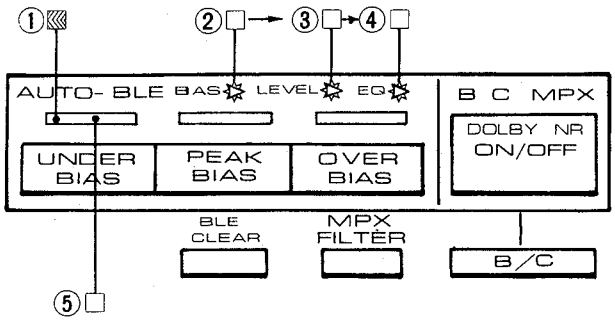
The tape is rapidly rewound from the right reel to the left reel when the REW switch is depressed. When the tape is rewound to its end, the auto-stop mechanism is activated and the tape stops.
Depress the STOP switch to stop a rewinding operation.

AUTO BLE TUNING SYSTEM

This deck is equipped with an auto tape selection function which automatically sets recording characteristics to the type of tape being used. However, commonly marketed tapes have unique characteristics depending on type, and even tapes of the same type may have subtle differences of sensitivity, frequency response, maximum output level, and operating bias, depending on the maker.The AUTO BLE function allows you to get the most out of each tape's characteristics, automatically setting and memorizing the optimum recording characteristics.

1. Press the POWER switch to turn on the power.
2. Insert a tape you wish to adjust for AUTO BLE into the cassette holder. The automatic tape selection function will detect the type of tape used, and will show that tape type in the tape indicator.
3. Press the bias switches in accordance with the program source to be recorded (OVER, PEAK, UNDER).
4. The deck will automatically enter the recording mode, and "tuning" of the tape will begin. The AUTO BLE indicators will light in order.
5. The tuning process will be completed in about 11 seconds, after which the tape will be automatically rewound to a point just past the start point. The indicator above the switch selected lights, and the optimum recording characteristics is memorized. The mechanism then enters the stop mode.

Order in which indicators light:



□ : steadily lighted ▨ : flashing

Advantages of AUTO BLE

In order to get the best possible tape performance during recording, it is necessary to set bias, recording level (recording sensitivity) and equalization to the levels optimum for each tape used. On most previous tape decks, standard values were set for average tapes, thus even when the tape selector was set for the "proper" position, delicate nuance differences between tapes could not be matched. In addition, the use of bias equalization fine-tuning controls to tune tapes audibly was very difficult to perform accurately, requiring a good deal extra time and trouble. In contrast, the AUTO BLE system uses a microprocessor to perform these adjustments automatically.

NOTE:

- *When the same tape is "tuned" 2 or 3 times, the previous memorized tunings will be erased, and only the last optimum recording characteristics will be memorized.*
- *When the power switch is turned off, all memory is erased.*
- *Be sure to break off the accidental erasure prevention tabs of recorded tapes. If a recorded tape with its erasure prevention tabs in place is loaded in the deck and the bias switch is pressed by mistake, the AUTO BLE operation will be initiated, and the tape's recorded contents will be erased.*
- *If the AUTO BLE operation is begun with the tape fully wound to its beginning (with leader tape exposed), following completion of AUTO BLE, the tape will be rewound to a point just prior to the start of the tape's magnetic portion. As a result, this position on the counter may not exactly match the counter's initial starting position.*
- *When reversing a tape to perform recording from side A to side B(or vice versa), the AUTO BLE value is still memorized and so it is not necessary to perform the AUTO BLE tuning operation on the second side.*
- *To clear the data set by the AUTO BLE tuning operation, press the CLEAR switch.*
- *There are times when the tape characteristics will not be memorized (the indicator above the BIAS switch will not light) depending on the tape. In such a case, wind the tape to another position using the PEAK BIAS BLE and perform the operation once again. If the tape characteristics still are not memorized, operate the system in the standard value mode (the state in which the indicator is not lit).*

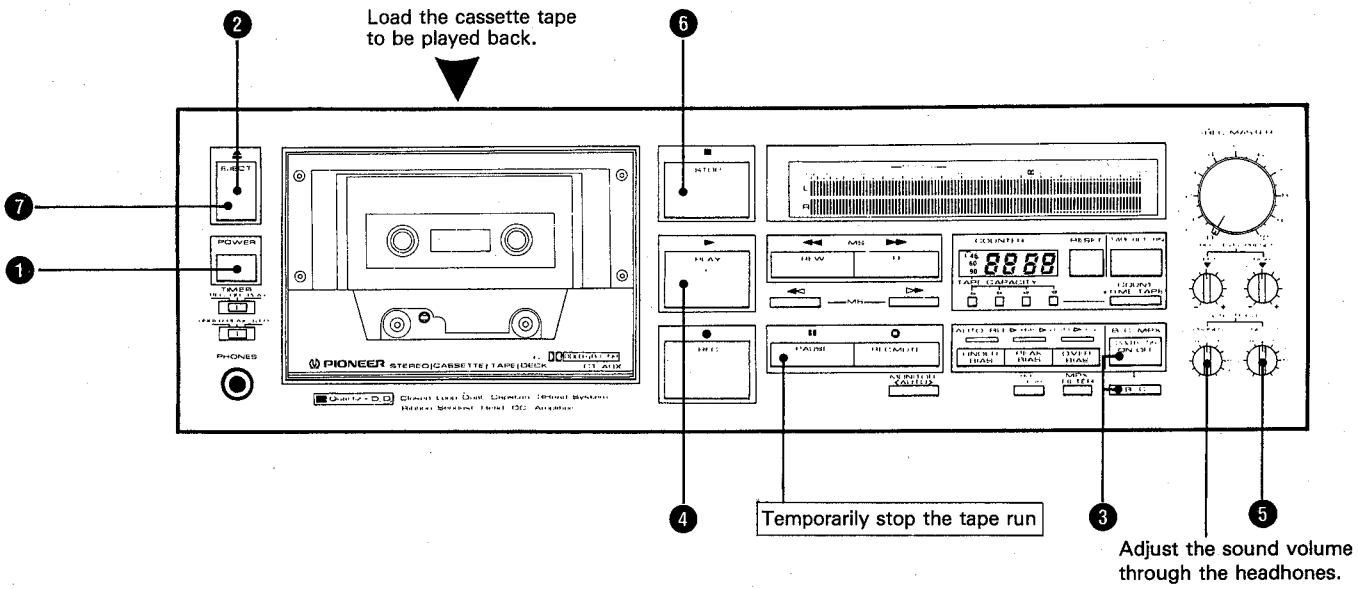
DOLBY TYPES B AND C

The tape hiss (noise mainly in the high-frequency range) heard when a recorded tape is played back can be very irritating. This is particularly the case in pianissimo treble sections where violins, for instance, are heard in an orchestral piece. The Dolby noise reduction system was developed in order to reduce this tape hiss. The Dolby type B system is already widely used for noise reduction but this unit features not only this type but also type C.
What the system does is this: when the midrange and treble sections, where the tape hiss is noticeable, are lower than the prescribed level, it records those sections at a level higher than the recording level at the "OFF" position of the Dolby system. During playback, the level is reduced by an amount equivalent to this increase and the sound is played back with a reduction in tape hiss. This operation is performed automatically in accordance with the strength of the input signals, and it is possible to improve the signal-to-noise ratio at frequencies over 5 kHz by about 10 dB. As a result, the system is really effective for the recording and playback of ordinary broadcasts and records, etc.
However, when recording a program source with a wide dynamic range, a greater reduction in the noise is required. It was for this reason that the Dolby type C system was developed.
The big difference between type B and type C is that the improvement in the high-frequency range noise is approximately a high 19 dB, compared with the "OFF" position of the Dolby system, and that the dynamic range is extended without causing the sound quality to change (without generating breathing noise).

- A note should be made of each tape recorded with the Dolby system so that it is not mistakenly played back with the Dolby system off.
- Always play back tapes with the same Dolby function which was used when they were recorded. Playing back a tape recorded with the Dolby system at the OFF (non-Dolby) position or playing back a normal tape with the Dolby system will not result in the faithful reproduction of the original sound.

PLAYBACK

- Is the power cord properly plugged into the outlet?
- Is the amplifier properly set for tape playback?
- Is the TIMER switch set to the OFF position?
- Are all connecting cords properly connected?



❶ Depress the POWER switch to ON.

❷ Press the EJECT button to open the cassette door.

With the tape surface facing down, insert a tape for playback. The automatic loading function will automatically close the cassette door. Also, if there is any slack in the tape, the tape slack prevention function will operate to take up any such slack.

❸ In accordance with the conditions under which the tape was recorded, press the appropriate Dolby NR switches (DOLBY NR ON/OFF), and Dolby NR B/C selector switch.

❹ Press the PLAY switch.

The auto tape monitor function will automatically switch to tape monitor (TAPE display will light.).

❺ Adjust output level with the LINE OUTPUT volume control.

Output from the LINE OUTPUT (PLAY) terminals is adjusted with the LINE OUTPUT volume control.

❻ Press the STOP switch to stop the playback.

To temporarily stop the playback, press the PAUSE switch. To resume playback, press the PAUSE switch again.

❼ Press the EJECT button to open the cassette door, and remove the cassette tape.

After removing the cassette tape, to close the cassette door, press it lightly with your finger.

ADJUSTING OUTPUT LEVEL

The output level adjustment control (LINE OUTPUT) is used to control output levels so that the sound remains proportionate when switching from the tape deck to another source (FM broadcasts, records, etc.), even when the amplifier's volume is left unchanged. For example, when listening through speakers with the tape deck and FM tuner connected to the amplifier.

1. Set the amplifier's monitor switch to SOURCE, set the input selector to TUNER, and listen to an FM broadcast.
2. Set the amplifier's volume control to your normal listening position. In order to use the FM stereo sound volume as a standard, do not move the volume control from this position.
3. Record the FM broadcast on cassette tape.
4. Set your amplifier's monitor switch to TAPE, and monitor the sound from the tape deck. Compare the sound volume from this playback to the original sound when the amplifier's monitor switch was set to SOURCE. If there is a difference between the sound volumes of SOURCE and TAPE, use the tape deck's output level adjustment control (LINE OUTPUT) to adjust the sound to the same volume. By switching the amplifier's monitor switch between SOURCE and TAPE and adjusting the tape deck's LINE OUTPUT control so that the sound volumes are equal, the input/output levels of the amplifier and tape deck will be adjusted to the optimum levels. In this way, when listening to an FM broadcast, even if the amplifier's monitor switch setting is changed, the playback sound from the tape deck will be identical to that of the amplifier, even without changing the position of the amplifier's volume control.

When recording a record on cassette tape, the sound volumes can be equalized in the same way as listed above.

USING THE ACCESSORY FUNCTIONS

MUSIC SEARCH

On music tapes, there are non-recorded intervals of several seconds between programs. This tape deck is equipped with a music search function which searches for these non-recorded intervals at fast forward (or rewind) speed, thus allowing you to find the beginning of any program on the tape.

1. Press either the ◀◀ or ▷▶ Music Search (MS) switch.
   - To listen to the presently playing program once again, press the ◀◀ switch.
   - To listen to the program following the presently playing program, press the ▷▶ switch.
2. When the non-recorded interval between programs is detected, the unit will switch from the fast forward or rewind mode to the playback mode.

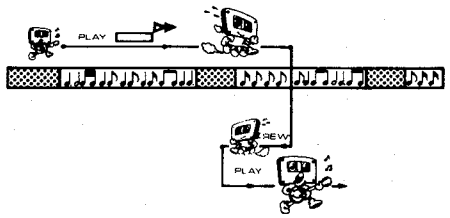
The music search operation will also be performed if one of the music search switches is pressed during the fast forward or rewind modes.

NOTE:

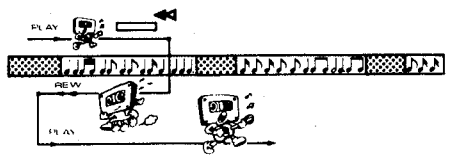
The music search function may not work properly with the following types of tapes. This does not, however, mean that there is something wrong with the unit.

- *Tapes which do not have unrecorded blanks between the programs lasting about 4 to 6 seconds.*
- *Tapes with classical music recorded, for instance, where pianissimo sections continue for many seconds, and tapes where, in a program, the sound is broken for several seconds.*
- *Tapes whose programs have all been recorded at a low level.*
- *Tapes of conversation where the recording of the voice is intermittent.*
- *Tapes where a high level of noise or hum has been recorded between programs.*

Listening to the following program
(Press ▷▶ switch)



Listening to the present program again
(Press ◀◀ switch)



AUTO REC MUTE FUNCTION

The auto rec muting function can be used both for cutting out unwanted material during recording, and for creating an appropriate non-recorded interval between programs.

- Use this function when recording radio broadcasts to cut out commercials or unwanted narration between programs, to create tapes with continuous music only.
- This function can also be used when recording records on tape to eliminate the sound of the stylus settling onto the record.
- Use this function as well to create the 4-second interval between programs necessary when using the music search function.

To Automatically Create a 4-Second Non-Recorded Interval

1. Begin recording.
2. When you come to the place where you wish to create the non-recorded interval, press the REC MUTE switch. The tape will continue to travel, but without recording any signals. During this interval, the recording muting indicator (●) will flash.
3. After approximately 4 seconds, tape travel will automatically stop, and the unit will enter the recording standby mode. The recording muting indicator will cease flashing.
4. To resume recording, press the PAUSE switch.

To cancel the automatic muting function

After pressing the REC MUTE switch, if you wish to cancel the muting function before 4 seconds has elapsed, and continue recording, press the REC switch.

To Create a Non-Recorded Interval of Less Than 4 Seconds

After pressing the REC MUTE switch, press the PAUSE switch before the unit enters the recording standby mode, (while the recording muting indicator is flashing). To resume recording, press the PAUSE switch again.

To Create a Non-Recorded Interval of More Than 4 Seconds

Press the REC MUTE switch for the entire length of time you wish the non-recorded interval to continue. During the first 4 seconds, the recording muting indicator will flash, but it will cease flashing if the switch is held depressed for longer than 4 seconds. When the switch is held depressed for longer than 4 seconds, the unit will enter the recording standby mode as soon as you release your finger from the switch. To resume recording, press the PAUSE switch again.

Timing the Muting Operation

When the tape deck is set to SOURCE monitor, program sounds can be heard from speakers and headphones even during the recording monitoring operation. In addition, the level meter continues to function, so that timing the start of your next recording is made even simpler, with no worry of missing an important program.

USING THE DUAL MODE COUNTER

To Indicate the Tape's Remaining Time (Real Time Counter)

With this function, the tape's remaining time will be shown during recording or playback. Particularly during recording, you can maintain a constant monitor of the time remaining on the tape, thus allowing you to use a limited amount of tape recording time in the most effective way.

1. Select the TAPE CAPACITY switch to match the type of cassette tape you are using. Be careful when using C-46 tapes, since there are two types, one with a broad hub, and one with a standard hub (see Fig. A, B).
2. Press the counter mode switch (•TIME/TAPE) to set the counter to the real time mode. A period will appear in the counter (see Fig. C).
3. When the tape deck is placed in the recording or playback mode, the period will frash, and the tape's remaining time will be calculated.
4. In about 5 seconds, an approximation of the remaining time will be displayed (see Fig. D).
5. When the calculation is completed, the tape's remaining time will be displayed accurately. The period will change from flashing to lighted (see Fig. E).

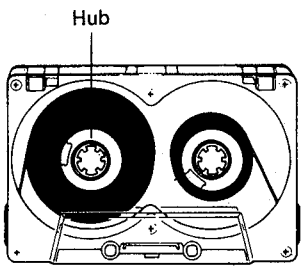


Fig. A Tape with standard hub diameter

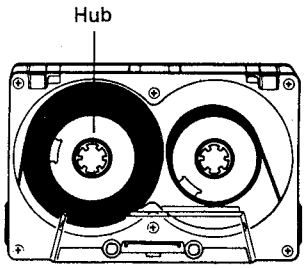


Fig. B Tape with broad hub diameter

- Period lighted

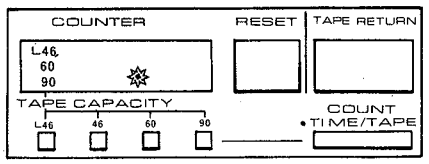


Fig. C

- Calculating tape remaining time

Display of approximate remaining time (25 min. 45 sec)

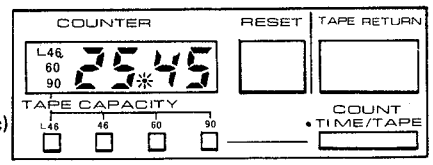


Fig. D

- Calculation completed

Accurate remaining tape time (25 min., 39 sec.)

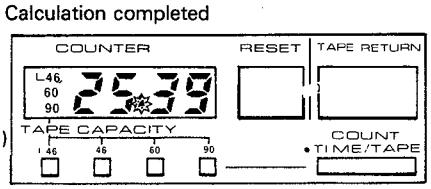


Fig. E

✵ lighted ✳ flashing

Accuracy of the Real Time Counter

The tape's remaining time is calculated by the unit's microprocessor by detecting the number of revolutions of the tape cassette's supply reel. As a result, the counter may not necessarily be as accurate as a clock. Even with tapes of the same length, the actual recording (or playback) time may vary due to differences in tape thickness, hub dimensions, and other factors.

NOTE:

- *When the tape is first stopped during recording or playback and then the tape run is resumed, the display is switched similarly from a rough to exact calculation of the remaining tape time.*
- *When the tape is fast forwarded or rewound, the display appears in 10-second units.*
- *The remaining tape time is indicated only for the 4 types of tape corresponding to the TAPE CAPACITY selector positions. The exact time may not be indicated for pre-recorded music tapes sold on the market.*
- *The remaining tape time display may differ slightly, depending on the tape used, from the actual time. Even when "00.00" appears as the remaining tape time, a little more tape will remain on almost all tapes.*
- *When the STOP switch is pressed while the period (●) is winking, the remaining tape time may not be displayed properly. In this case, press the PLAY switch.*

To Use As a Tape Counter

1. Press the counter mode switch to set to tape counter.
2. As the tape travels, the counter's numbers will change. If you keep a record of program contents and corresponding tape counter numbers while recording or playing tapes, it is much simpler to find a particular program you wish to listen to, or the next place for recording.

RECORDING AND PLAYBACK USING THE AUDIO TIMER

Make use of an optional audio timer for recording programs you want to hear while you are out or for waking yourself up in the morning with one of your favorite tunes you have recorded on a tape. Recording or playback can be started automatically at the desired time.
The operation of the timer differs from timer to timer and so the timer's Operating Instructions should be studied closely.

UNATTENDED RECORDING

1. Set the POWER switches of the components to OFF and connect them as shown in the figure.
2. Set the unit's TIMER switch to OFF.
3. Set the POWER switches of the components to ON and turn down the volume control on the stereo amplifier.
4. Press the EJECT button to open the cassette door. Check that the cassette's erasure prevention tabs have not been broken off and that the tape has been rewound onto the left-hand reel. Then load the cassette tape with the exposed tape surface facing down.
5. Tune in the station whose program is to be recorded on the tuner.
6. Select the DOLBY NR switch positions. When the Dolby system is used, select type B or C for recording.

   Set the MPX FILTER switch to ON when recording an FM stereo program with the Dolby system.

7. Press the REC switch (To set the unit to the recording standby mode).
8. Adjust the recording level with REC MASTER and REC LEVEL PRESET volume control.
9. Set the time on the audio timer so that the power comes on at the desired time (this action switches off the power to the audio components).
10. Set the CT-A9X's TIMER switch to REC. Select the appropriate bias switch (connected in tandem to the timer switch). At your selected time, the power will be turned on, and recording will begin at the optimum recording characteristics.

Remember that no sound can be recorded onto the leader tape.

WAKE-UP PLAYBACK

1. Connect the audio components in the same way as for the unattended recording operation.
2. Set the unit's TIMER switch to OFF.
3. Set the POWER switches of the components to ON.
4. Press the EJECT button to open the cassette door. Then load the cassette tape which is to be played back.
5. Select the DOLBY NR switch positions. When the Dolby system is used, select type B or C for playback.
6. Press the PLAY switch to start the tape running and adjust the stereo amplifier's volume control to the level required when timer playback starts.
7. Rewind the tape to the position where playback is to start.
8. Set the time on the audio timer so that the power comes on at the desired time (this action switches off the power to the audio components).
9. Se the CT-A9X's TIMER switch to PLAY. The power comes on at the preset time and playback starts automatically about 4 seconds later.

The deck's TIMER switch functions at the instant

The TIMER switch should be set while the deck's power is off. If it is moved while the power is on, the deck will not operate correctly. Do not move the TIMER switch immediately after (within about 4 seconds) the POWER switch has been set to ON since recording or playback may start.

Once timer recording/playback is over

Always return the deck's TIMER switch to OFF. If, for some reason, it is still at the REC position when the power is next switched on, the deck will be set to the recording mode and the contents of a prerecorded tape may be erased.

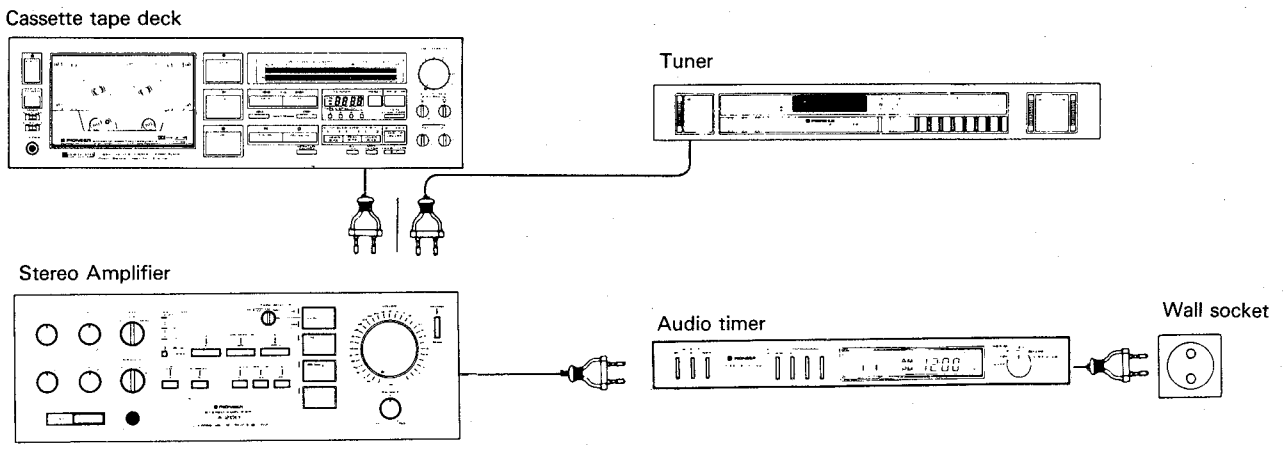


Illustration not applicable to U.K. model

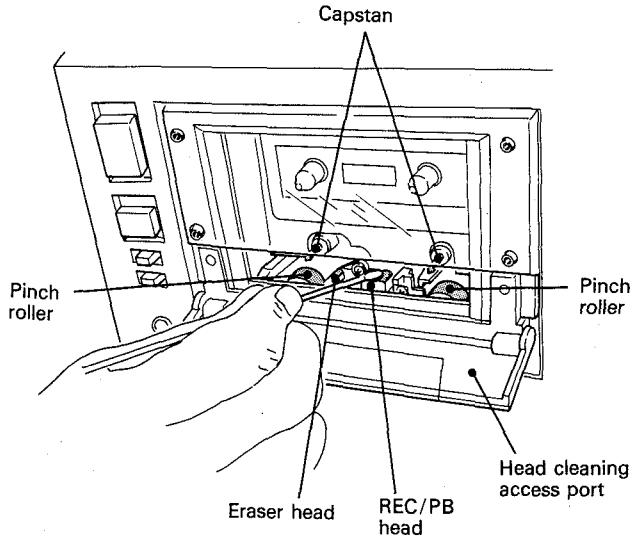
MAINTENANCE

CLEANING THE HEADS, PINCH ROLLERS, AND CAPSTAN

The heads, capstan, and pinch roller of a cassette deck are parts easily contaminated by dirt, dust, and oil during tape travel. Dirty heads in particular result in poor tape-to-head contact, causing poor sound quality, upsetting stereo balance, and causing fluctuations in tape speed. Clean the heads regularly with special head-cleaning swabs, or a soft cloth dipped in cleaning fluid.

1. Open the head cleaning access port.
2. Set the POWER switch to ON.
3. Press the PLAY switch. The head base will rise and the pinch rollers will begin rotating.
4. Moisten a cleaning swab lightly with cleaning fluid, and gently wipe the heads, pinch rollers, and capstans.

NOTE:
- *After cleaning, do not load a tape (for 2 to 3 minutes) until the cleaning fluid has dried.*
- *Set the stereo amplifier's volume control to the minimum position when cleaning the heads.*



DEMAGNETIZING THE HEADS

After using the cassette deck over a period of time, the heads will become magnetized. The same effect is also caused by bringing a screwdriver, magnet or other magnetized object too near the heads. This causes loss of high-frequency sound during recording and playback, and is also a cause of interference noise. The heads should be regularly demagnetized with a head demagnetizer (eraser) which can be purchased at the dealers shops.
When demagnetizing the heads, be sure the cassette deck's POWER switch is in the OFF position. For detailed instructions, consult the operating manual for your head demagnetizer (eraser).

CLEANING THE FRONT PANEL SECTION

Wipe the front panel and the cassette holder when dusty or greasy with a soft cloth containing a small amount of ordinary washing-up liquid. Then, wipe dry with a cloth. Never use volatile spirits like thinners, benzine or alcohol because they will damage the panel's finish.

TROUBLESHOOTING

Incorrect operation is often mistaken for trouble or malfunctioning. If you think that something is wrong with your unit, check out the points below. The trouble may sometimes lie in another component. Investigate the speaker systems and other electrical apparatus which are being used. If the trouble cannot be rectified even after exercising the checks listed below, ask your nearest PIONEER authorized service center or your dealer to carry out repair work.

Symptom	Probable cause	Remedy
Tape does not travel.	• Power cord is loose or unplugged.	• Plug the power cord firmly into an AC outlet.
	• The PAUSE switch is depressed.	• Depress the PAUSE switch again.
	• Cassette tape is improperly loaded.	• Load the cassette tape properly.
	• Tape is wound too tightly.	• Rewind the tape.
No sound.	• Connections with amplifier are incorrect.	• Check connections, and reconnect loose or disconnected cords.
	• No sound is recorded on tape.	• Replace with pre-recorded tape.
	• The amplifier volume controls are incorrectly adjusted.	• Set amplifier controls to correspond to signal level of tape.
	• The LINE OUTPUT control is set to minimum position.	• Set the LINE OUTPUT control to the proper level.
Unit will not record.	• Accidental erasure prevention tabs on cassette are broken off.	• Replace with another cassette, or cover the tab holes with adhesive tape.
	• The INPUT (REC MASTER or REC LEVEL PRESET) volume control is set to minimum position.	• Set the INPUT volume control to the proper level.
	• Heads are dirty.	• Clean the heads.
High frequency sound is not reproduced.	• Heads are dirty.	• Clean the heads.
	• Non-Dolby recorded tape is played back with Dolby ON.	• Set the DOLBY NR switch OFF.
	• Heads are magnetized.	• Demagnetize the heads.
Sound is distorted.	• Heads are magnetized.	• Demagnetize the heads.
	• Heads are dirty.	• Clean the heads.
	• Recorded program itself is distorted.	• Replace with another cassette tape.
	• Recording level is set too high.	• Set the proper recording level.
Sound wavers or speeds up.	• The heads, pinch roller and capstan are dirty, or the cassette tape is wound too tightly.	• Clean heads, capstan, and pinch roller. Rewind tape on fast forward or rewind.
High noise level.	• Heads are magnetized.	• Demagnetize the heads.
	• Heads are dirty.	• Clean the heads.
	• Using a tape with a high noise level.	• Use another tape.
	• Loose cord connections.	• Check each INPUT and OUTPUT cord and connect firmly.
	• Recording level is set too low.	• Set proper recording level.
High-range sounds are overemphasized.	• Tape recorded using Dolby NR system and being played back with DOLBY NR switch OFF.	• Set DOLBY NR switch ON.
No erasing.	• Heads are dirty.	• Clean the heads.
	• The INPUT volume is not set to minimum position.	• Set the INPUT volume to minimum position.
Music search does not operate.	• The non-recorded interval between programs is not 4 seconds long.	• Use a cassette with non-recorded intervals of at least 4 seconds.
AUTO BLE does not operate.	• Cassette tape erasure prevention tabs are broken off.	• Use a different cassette tape, or cover the erasure prevention tab holes using adhesive tape.
Remaining tape time is not displayed exactly.	• TAPE CAPACITY selector is not set properly.	• Set the TAPE CAPACITY selector in accordance with the type of cassette tape being used.

CASSETTE TAPES

CHECK CASSETTE BEFORE USE

Slack or protruding tape

If the tape protrudes from the cassette as shown in Fig. A or is slack, the tape may run without passing between the capstan and the pinch roller and so may be damaged. Take up the slack by inserting a pencil through the reel hub and turning it as shown in Fig. A.
Some tapes provide a tape stopper to prevent tape slack. Make sure that you remove the tape stopper before inserting the tape into the deck.

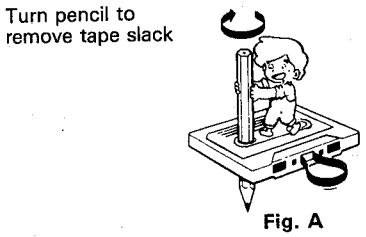


Fig. A

Erasure prevention tabs

Cassette tapes are provided with erasure prevention tabs, as shown in Fig. B, which act as a protection device to prevent the accidental erasure of a recording which you want to keep. If you remove the tabs, as shown in Fig. B, with a screwdriver you will be able to prevent erasure if you accidentally set the tape deck to the recording mode by depressing the REC switch.
To re-record, cover the tab opening with adhesive tape (Fig. C).

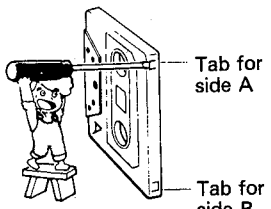


Fig. B

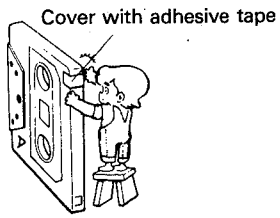


Fig. C

NOTE:
Cassette tapes are provided with two tabs (A or 1 and B or 2) so you can protect the recordings on both sides.

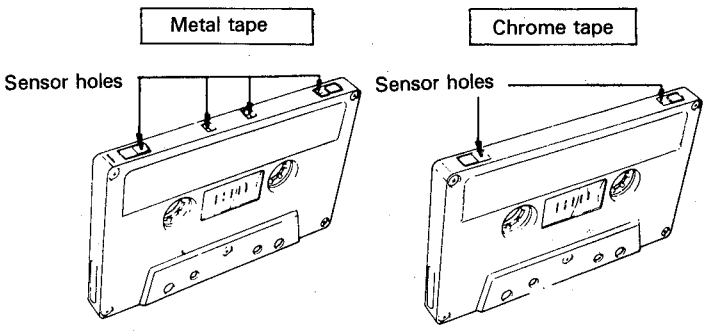
HINTS ON HANDLING CASSETTE TAPES

- **Check the tape before recording.**
  Before starting to use the tape for recording, load the tape and set the tape deck to fast forward or rewind.
  This will safeguard the deck against damage caused by irregularities in the tape winding.
- **Take care with the leader tape.**
  A leader tape is attached to the beginning of the cassette tape (you cannot record on it). It takes about 5 seconds for it to pass through, so bear this point in mind when recording.
- **Do not load a cassette immediately after cleaning the heads.**
  Do not load a cassette immediately after you have cleaned the heads until the head surfaces are completely dry (this takes 2~3 minutes).
- **Storing cassette tapes**
  Do not store your cassette tapes without putting them in their cases since dust and dirt will adhere to them. Always store in a location which is free from dust, dirt, oil, and magnetic effects.
- **Do not use the C-120 tapes.**
  The C-46, C-60 and C-90 tapes are most commonly used.
  The C-120 tapes are not recommended because their mechanical and electrical specifications vary.

REGARDING THE TAPE CASSETTE SENSOR HOLES

This unit is equipped with an automatic tape selector function which utilizes the sensor holes on the tape cassette to determine the type of tape being used, in order to set the deck to match the tape's recording bias and equalization.

- Normal tapes have no sensor holes, and are thus detected as normal.
- When metal tapes without sensor holes are used, the tape selector will switch to the CrO2 position. In this case, optimum recording and erasure may not be possible. We thus recommend that you use metal tapes with sensor holes. However, prerecorded metal tapes can be played as they are on this unit.



SPECIFICATIONS

System ..... 4 track, 2 channel stereo
Heads ..... "Ribbon Sendust" recording/playback combination head x 1, Erasing head x 1
Motor ..... Quartz PLL D.D. capstan motor x 1
Coreless reel motor x 1
Wow/Flutter ..... No more than 0.018% (WRMS)
No more than ± 0.048% (DIN)
Fast Winding Time ..... Approx. 80 seconds (C-60 tape)

Frequency Response
−20 dB recording:
Normal tape ..... 20 to 21,000 Hz (30 to 19,000 Hz ± 3 dB)
Chrome tape ..... 20 to 22,000 Hz (25 to 20,000 Hz ± 3 dB)
Metal tape ..... 20 to 23,000 Hz (25 to 21,000 Hz ± 3 dB)
0 dB recording:
Chrome tape ..... 20 to 11,000 Hz
Metal tape ..... 20 to 16,000 Hz
Signal-to-Noise Ratio
Dolby NR OFF ..... More than 58 dB
Noise Reduction Effect
Dolby type B NR ON ..... More than 10 dB (at 5 kHz)
Dolby type C NR ON ..... More than 19 dB (at 5 kHz)
Harmonic Distortion ..... No more than 0.8% (0 dB)
Input (Sensitivity)
LINE (INPUT) ..... 63 mV (Input impedance 100 kΩ)
Output (Reference level)
LINE (OUTPUT) ..... 0,63 V (Output impedance 7 kΩ)
Headphone ..... 0,45 mW (Load impedance 8 Ω)

MISCELLANEOUS

Power Requirements
KU, KC models ..... AC 120 V, 60 Hz
HEM model ..... AC 220 V, 50/60 Hz
HB, HP models ..... AC 240 V, 50/60 Hz
D, D/G models ..... AC 120/220/240V, 50/60 Hz (switchable)
Power Consumption
KU, KC models ..... 52 watts
HEM, HB, HP models ..... 57 watts
D, D/G models ..... 46 watts
Dimensions ..... 420 (W) x 130 (H) x 374 (D) mm
16-9/16 (W) x 5-1/8 (H) x 14-3/4 (D) in
Weight (without packaging) ..... 10 Kg (22 lb 1 oz)

FURNISHED PARTS

Operating instructions 1
Connection cord with pin plug 2
Side panels 1
(side panels not supplied with Europe and U.K. models)

SUBFUNCTIONS

- MOL balance control type AUTO BLE
- Dolby NR system (type B and C)
- Quartz PLL D.D. capstan motor
- Closed loop dual capstan
- One touch MS, one touch tape return
- Auto monitor
- Auto tape selector function
- Dual mode counter
- Auto rec mute
- Recording level warning zone switch
- Auto loading/power eject
- Timer standby function

NOTES:
1. Reference Tapes:
Normal and LH: DIN 45513/BLATT6 or equiv.
CrO_2 DIN 45513/BLATT7 (CrO_2) or equiv.
2. Reference Recording Level: Meter 0 dB indicating level (160 nwb/m magnetic level = Philips cassette reference level)
3. Reference Signal: 315 Hz
4. Wow and Flutter: • JIS (3 kHz, with acoustic compensation (weighted) rms value); DIN 3,150Hz with acoustic compensation tion (weighted) PEAK value DIN 45507
5. Frequency Response: • Measured at − 20 dB level, DOLBY NR OFF, level deviation is ± 6 dB without indication.
6. Signal-to-Noise Ratio: • Measured at 3rd harmonic distortion 3% level, weighted (DIN 45513/BLATT7)
7. Sensitivity: Input level (mV) required for reference recording level with input (REC) level control set to maximum
8. Maximum Allowable Input: While decreasing settings of input (REC) level controls and increasing level at input jacks, this is the maximum input level (mV) at the point where recording amplifier OUTPUT waveform becomes clipped.
9. Reference Output Level: Playback output level when meter indicates 0 dB.
10. This model does not employ a recording/playback connector (DIN-type).

NOTE:
Specifications and the design are subject to possible modifications without notice due to improvements.

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